

CLAIMS

1. A method of adjusting the transmitting power of a wireless sending entity (e) in a network of wireless communicating entities, including the step of
5 identifying the entities (e_i) adjacent to the sending entity (e), that is, the entities of the network, separate from the sending entity, from which the sending entity (e) is able to receive the messages, the method being characterized in that it further includes
10 the steps of:

- 15 - identifying, among the adjacent entities (e_i), a minimum constellation associated with the sending entity (e), that is, quantitatively, the smallest set of entities (e_i) adjacent to the sending entity (e) included in a circle centered on the latter, and at least three of which (e_i) form a convex polygon circumscribing the sending entity (e);
- 20 - identifying, among the adjacent entities (e_i) not belonging to the minimum constellation, any so-called peripheral entities, whose own minimum constellation includes the sending entity (e);
- 25 - adjusting the transmitting power of the sending entity (e) to a minimum value enabling the messages sent by the sending entity (e) to reach both the entities of the minimum constellation associated with the sending entity (e) and the identified peripheral entities.

2. The method as claimed in claim 1, further
30 including an additional step in which, after having adjusted its transmitting power, the sending entity sends each adjacent entity (e_i) a message containing:

- an identifier (e) associated with said sending entity (e),

- the position (x, y) of the sending entity (e) and
- the minimum sending distance (p) of the sending entity (e), that is, the radius of the smallest circle, centered on the sending entity (e), including the minimum constellation associated with the sending entity (e).

3. The method as claimed in claim 1 or 2, wherein the identification of the adjacent entities (e_i) consists in storing in a first table (L), for each adjacent entity (e_i):

- an identifier (e_i) associated with said adjacent entity (e_i),
- the position (x_i , y_i) of said adjacent entity (e_i) and
- the minimum sending distance (p_i) of said adjacent entity (e_i), that is, the radius of the smallest circle, centered on said adjacent entity (e_i), including the minimum constellation associated with said adjacent entity (e_i).

4. The method as claimed in claim 3, wherein each adjacent entity (e_i) sends the sending entity (e) a message containing:

- the identifier associated with the adjacent entity (e_i),
- the position (x_i , y_i) of the adjacent entity (e_i) and
- the minimum sending distance (p_i) of the adjacent entity (e_i).

5. The method as claimed in claim 3 or 4, wherein the identification of the entities belonging to the minimum constellation associated with the sending entity (e) includes the step of storing in a second

table (K), for each adjacent entity (e_i) belonging to the minimum constellation:

- the identifier associated with said adjacent entity (e_i),
- 5 - the position (x_i, y_i) of said adjacent entity (e_i) and
- the minimum sending distance (p_i) of said adjacent entity (e_i).

6. The method as claimed in claim 5, wherein the
10 identification of the peripheral entities includes the step of storing in a third table (J), for each of said entities:

- the identifier associated with said peripheral entity,
- 15 - the position of said peripheral entity, and
- the minimum sending distance of said peripheral entity.

7. The method as claimed in claim 6, wherein the
adjustment of the transmitting power includes the step
20 of selecting either the greatest of the distances separating the sending entity (e) from the entities of the third table (J) or, when said third table (J) is empty, the greatest of the distances separating the sending entity (e) from the entities of the second
25 table (K), the power adjustment being made in such a way as to adapt the sending range to the selected distance.

8. The method as claimed in claim 7, further including additional steps in which, after having
30 adjusted its transmitting power:

- the sending entity (e) sends each of the adjacent entities (e_i) a message containing its identifier

(e), its position (x, y) and its minimum sending distance (p),

- the tables (J, K, L) are emptied.

9. A wireless communication unit intended to form
5 a sending entity (e) of a network of wireless communicating entities, comprising:

10 - means of identifying entities (e_i) adjacent to said unit, that is, the entities of the network, separate from said communication unit, from which the latter is able to receive the messages;

15 - means of identifying a minimum constellation associated with said communication unit, that is, quantitatively, the smallest set of entities (e_i) adjacent to said communication unit included in a circle centered on the latter, and at least three of which (e_i) form a convex polygon circumscribing said communication unit;

20 - means of identifying, among the adjacent entities (e_i) not belonging to the minimum constellation, any so-called peripheral entities, whose own minimum constellation includes said unit; and

25 - means of adjusting the transmitting power of said communication unit to a minimum value enabling the messages sent by the communication unit to reach both the entities of the minimum constellation associated with said communication unit and the identified peripheral entities.

10. A network (1) of wireless communicating entities (e_i), wherein each entity (e) comprises:

30 - means of identifying entities (e_i) adjacent to said entity (e), that is, the entities of the network, separate from said entity (e), from which the latter is able to receive the messages;

- 5 - means of identifying a minimum constellation associated with said entity (e), that is, quantitatively, the smallest set of entities (e_i) adjacent to said entity (e) included in a circle centered on the latter, and at least three of which (e_i) form a convex polygon circumscribing said entity (e);
- 10 - means of identifying, among the adjacent entities (e_i) not belonging to the minimum constellation, any so-called peripheral entities, whose own minimum constellation includes said entity (e); and
- 15 - means of adjusting the transmitting power of said entity (e) to a minimum value enabling the messages sent by this entity (e) to reach both the entities of the minimum constellation associated with said communication entity (e) and the identified peripheral entities.

11. A computer program product, including
20 instructions for implementing the method as claimed in one of claims 1 to 8, upon execution by processing means incorporated in the sending entity.